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January 15, 2018

Arthur Burbank
USDA Forest Service
4350 South Cliffs Dr.
Pocatello, ID 83204

Subject: **Biological Selenium Removal Treatment Technology**
Water Treatment Pilot Study
December 2017 Progress Report

Dear Art,

This progress report summarizes key activities in December 2017 associated with Phase 2 of the Water Treatment Pilot Study located near Hoopes Spring. This Pilot Study is being conducted as part of the Smoky Canyon Mine Remedial Investigation/Feasibility Study (RI/FS) to provide information on the effectiveness of the active biological treatment system in removing selenium and other COPCs from South Fork Sage Creek Springs and Hoopes Spring.

Work related to the approved Phase 2 Pilot Study continues at the site in accordance with the Final *Phase 2 Pilot Study Work Plan and Sampling and Analysis Plan, Ultra-Filtration/Reverse Osmosis and Biological Selenium Removal Fluidized Bed Bioreactor Treatment Technology* (Phase 2 WP/SAP).

Identification of Deliverables and Data Transmittals

There were no outstanding deliverables or transmittals for the month of December.

Completed Activities

The following activities associated with the Phase 2 Pilot Study were completed in December 2017:

- Post treatment system commissioning, including polymer testing and selection was completed.
- Stabilization of the post treatment system operation was achieved on December 4th and the system was gradually brought online.
- Full design flow was achieved on December 7th.
- Continued construction of the biosolids dewatering system.

Attached are graphs of the operational startup data for the month of December. Figure 1 shows the reverse osmosis (RO) concentrate and the effluent selenium concentrations. The Treatment System Pilot influent concentration has been ~135 ug/L. After the December 8th samples (which were collected after one day of full operation) the system effluent averaged ~8 ug/L. This represents ~94% total selenium removal.
Figure 2 shows the average system flows for the month of December. Once the system reached

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full flow, the average flow of the TSP was 1,874 gpm. Full stable operation has not been achieved and will include backwashing of the FBR units.

Upcoming Activities

The following activities associated with the Phase 2 Pilot Study are planned through January 2018:

- Continue system startup to achieve steady state operation and treatment of selenium.
- Establish initial steady state operation and begin system monitoring in accordance with the sampling and analysis plan.
- Complete commissioning of the biosolids dewatering system and begin dewatering solids.

Please contact me if there are questions regarding this monthly progress report.

Sincerely,

Jeffrey Hamilton
Environmental Engineer

cc:

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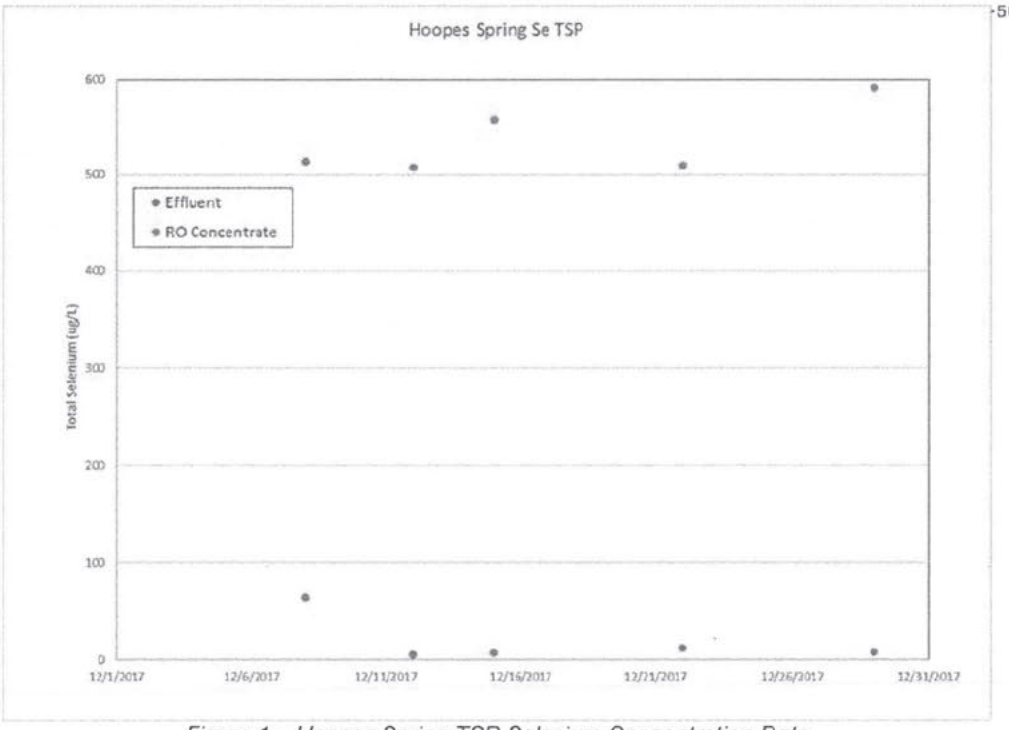

Figure 1 – Hoopes Spring TSP Selenium Concentration Data

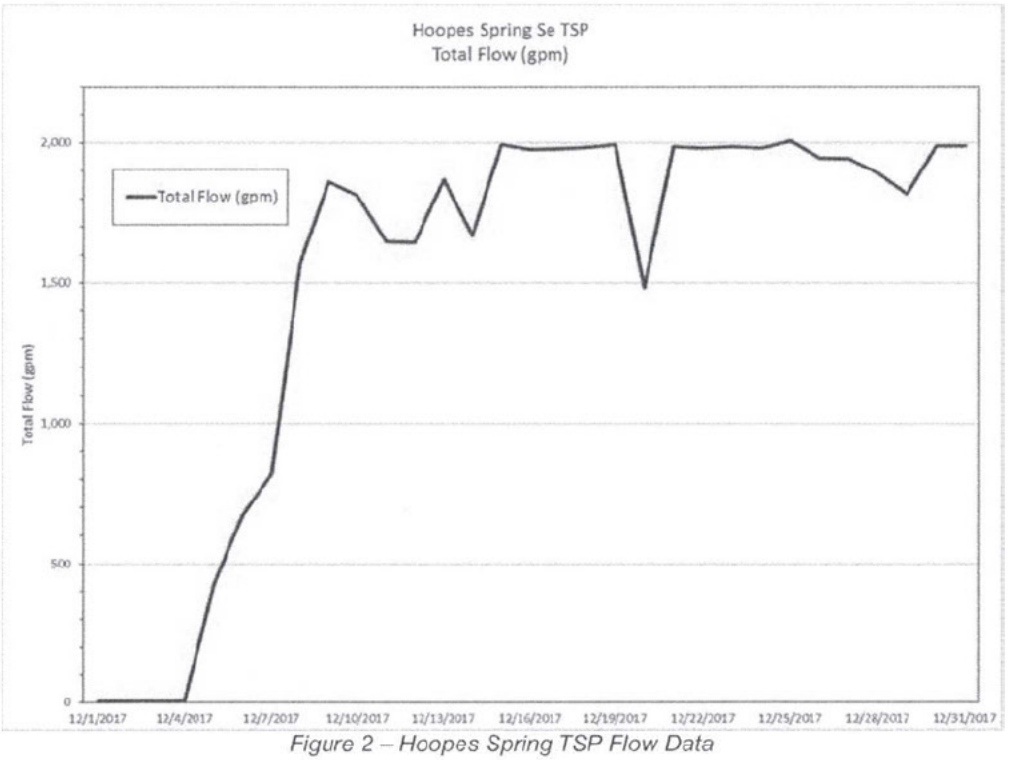

Figure 2 – Hoopes Spring TSP Flow Data